IN THE CLAIMS

The claims as they currently stand are as follows.

1   1.   (Previously amended) A mobile internetwork comprising a plurality of network
2   elements including at least one gateway node and at least one local area network coupled
3   among at least one peripheral electronic device, wherein functions of the plurality of
4   network elements are remotely controllable, wherein the at least one gateway node
5   manipulates node information including configuration and security information to
6   provide secure interoperability among the plurality of network elements and the at least
7   one peripheral electronic device, wherein the gateway node comprises at least one
8   interface port, at least one real-time interface processor (RTIP), and at least one
9   application processor, wherein the at least one RTIP performs real-time operations and
10   the at least one application processor performs high level processing functions, wherein
11   the gateway node provides at least one of data processing, data storage, access control,
12   protocol translation, security including service discovery and device authentication, and
13   network control, wherein the gateway node controls remote access to the mobile
14   internetwork in response to intermittent external communications.

1   2.   (Previously amended) The mobile internetwork of claim 1, wherein the at least
2   one local area network comprises at least one of an Original Equipment Manufacturer
3   (OEM) bus, an Automotive Multimedia Interface Consortium (AMI-C) bus, at least one
4   external network, and at least one local development network.

1   3.   (Previously amended) The mobile internetwork of claim 2, wherein the at least
2   one local development network accesses the at least one gateway node for the
3   performance of application upgrades, diagnostics, and programming.

1   4.   (Previously amended) The mobile internetwork of claim 2, wherein the at least
2   one local development network supports manipulation and transfer of entertainment
3   software, wherein the entertainment software comprises at least one entertainment feature

4   including video, audio, movies, television shows, music, games, and simulations.

1   5.   (Previously amended) The mobile internetwork of claim 1, wherein the at least
2   one vehicle bus comprises at least one legacy automotive bus including at least one of
3   Audio Control Protocol (ACP) buses and Standard Corporate Protocol (SCP) buses.

1   6.   (Previously amended) The mobile internetwork of claim 1, wherein the at least
2   one peripheral electronic device comprises at least one device coupled to at least one
3   OEM bus, wherein the device includes at least one of climate control devices, actuator
4   devices, position location devices, Global Positioning System (GPS) devices,
5   communication devices, cellular telephony devices, processing devices, diagnostic
6   devices, modems, video devices, audio devices, multimedia devices, electronic game
7   devices, sensor devices, switch devices, and device subnetworks.

1   7.   (Previously amended) The mobile internetwork of claim 1, wherein the at least
2   one peripheral electronic device comprises at least one device coupled to at least one
3   AMI-C bus including communication devices, position location devices, GPS devices,
4   communication devices, position location devices, processing devices, modems, video
5   devices, audio devices, multimedia devices, electronic game devices, personal digital
6   assistants (PDAs), and wireless local area network (LAN) devices.

1   8.   (Previously amended) The mobile internetwork of claim 1, wherein the at least
2   one gateway node comprises at least one interface port that is at least one of Intelligent
3   Data Bus (IDB-C) ports, MOST ports, Institute of Electrical and Electronics Engineers
4   (IEEE) 1394 ports, On-Board Diagnostic-II (OBD-II) ports, Bluetooth ports, Personal
5   Communications Service (PCS) ports, Global System for Mobile Communications
6   (GSM) ports, and Ethernet ports.

1   9.   (Previously amended) The mobile internetwork of claim 1, wherein the functions
2   are hosted on a central network element, wherein the functions are distributed among the
3   plurality of network elements in response to a coupling of additional peripheral electronic

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4   devices to the at least one vehicle bus.

1   Claims 10 and 11 (canceled).

1   12.   (Previously amended) The mobile internetwork of claim 1, wherein the at least
2   one gateway node functions as an Internet Protocol (IP) router, wherein the at least one
3   RTIP comprises a high-speed bus controlled by at least one coupled device.

1   13.   (Previously amended) The mobile internetwork of claim 1, wherein the at least
2   one interface port has at least one function that includes at least one of a tag, a bridge, and
3   an interface.

1   14.   (Previously amended) The mobile internetwork of claim 1, wherein the at least
2   one interface port includes at least one of wired communication ports and wireless
3   communication ports.

1   15.   (Previously amended) The mobile internetwork of claim 1, wherein the at least
2   one gateway node includes a first gateway coupled to a second gateway.

1   Claim 16 (canceled).

1   17.   (Previously amended) The mobile internetwork of claim 1, wherein the at least
2   one gateway node couples a first vehicle bus and a second vehicle bus, wherein the at
3   least one interface port couples the at least one vehicle bus to the at least one peripheral
4   electronic device.

1   Claims 18, 19, 20, and 21 (canceled).

1   22.   (Previously amended) The mobile internetwork of claim 1, wherein the at least
2   one gateway node comprises at least one hybrid switch, wherein the at least one hybrid
3   switch includes at least one interface port coupled among at least one switch of a first

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4   speed and at least one switch of a second speed, wherein each of the at least one switch of

5   a first speed and the at least one switch of a second speed are coupled to at least one port.

1   23.   (Previously amended) The mobile internetwork of claim 22, wherein the at least

2   one hybrid switch distributes at least one switching function among the plurality of

3   network elements of a host vehicle.

1   24.   (Previously amended) The mobile internetwork of claim 22, wherein at least one

2   application of a first type is coupled through the interface port to the at least one switch

3   of a first speed, wherein at least one application of a second type is coupled through the

4   interface port to the at least one switch of a second speed.

1   25.   (Previously amended) The mobile internetwork of claim 1, wherein the at least

2   one gateway node couples to at least one subnetwork, wherein the at least one

3   subnetwork comprises at least one of sensor devices, actuator devices, wired network

4   devices, and wireless network devices.

1   26.   (Previously amended) The mobile internetwork of claim 1, further comprising at

2   least one router that couples to the Internet using at least one bus and at least one

3   communication device, wherein the at least one bus includes at least one of an IEEE 1394

4   bus, a MOST bus, an IDB-C bus, and an Ethernet bus, wherein the at least one

5   communication device includes at least one of a Bluetooth modem, an IEEE 802.11

6   radio, and a mobile telephone.

1   27.   (Previously amended) The mobile internetwork of claim 1, wherein the at least

2   one gateway node generates at least one hierarchy of communication alternatives in

3   response to a determined position of a host vehicle, wherein a selected communication

4   alternative is used to communicate with at least one local site.

1   28.   (Previously amended) The mobile internetwork of claim 1, wherein data

2   processing is controlled using at least one processing hierarchy that controls at least one

3   event including at least one of data classifications, data transfers, data queuing, data

4   combining, processing locations, and communications among the plurality of network

5   elements.

1   29.   (Previously amended) The mobile internetwork of claim 1, wherein the functions

2   are distributed among the plurality of network elements.

1   30.   (Previously amended) The mobile internetwork of claim 1, wherein the functions

2   of the at least one gateway node include at least one of data acquisition, data processing,

3   communication management, data routing, data security, programming, node operation,

4   protocol translation, network management, and interfacing with at least one

5   communication physical layer including cellular telephony, wireline telephone, satellite

6   telephony, packet radio, microwave, optical.

1   31.   (Previously amended) The mobile internetwork of claim 30, wherein data

2   processing functions of the peripheral electronic device are distributed among at least one

3   other processor that includes a processor of the gateway node.

1   32.   (Previously amended) The mobile internetwork of claim 1, wherein the at least

2   one gateway node implements at least one security method that includes at least one of

3   confounder codes, encrypted transmissions, security policy-based communication

4   protocols, blocking coupling with unauthorized devices, and blocking commands from at

5   least one class of device.

1   33.   (Previously amended) The mobile internetwork of claim 32, wherein the at least

2   one security method is implemented in the at least one gateway node and at least one port

3   node.

1   34.   (Previously amended) The mobile internetwork of claim 32, wherein the at least

2   one security method includes blocking denial of service attacks by decoupling at least

3   one interface port through which unauthorized access is attempted and blocking at least

4   one application at the interface port.

1   35.   (Previously amended) The mobile internetwork of claim 32, wherein the at least

2   one security method further includes at least one of a key, a password device, and a

3   security display.

1   36.   (Previously amended) The mobile internetwork of claim 32, wherein the at least

2   one security method further includes a designated authorization port, wherein at least one

3   connector is coupled to the designated authorization port to receive authorization for

4   coupling a device to the plurality of network elements.

1   37.   (Previously amended) The mobile internetwork of claim 1, wherein the plurality

2   of network elements automatically organize in response to the node information, wherein

3   the automatic organizing comprises automatically controlling data transfer, processing,

4   and storage among the plurality of network elements.

1   38.   (Previously amended) The mobile internetwork of claim 1, wherein at least one

2   level of synchronization is supported among different subsets of the plurality of network

3   elements, wherein a first level of synchronization is supported among a first subset of the

4   plurality of network elements, wherein a second level of synchronization is supported

5   among a second subset of the plurality of network elements.

1   39.   (Previously amended) The mobile internetwork of claim 1, wherein the plurality

2   of network elements are self-assembling, wherein search and acquisition modes of the at

3   least one gateway node search for participating ones of the plurality of network elements,

4   wherein a determination is made whether each of the participating ones of the plurality of

5   network elements are permitted to join the internetwork using a message hierarchy,

6   wherein the plurality of network elements are surveyed at random intervals for new nodes

7   and missing nodes.

1   40.   (Previously amended) The mobile internetwork of claim 1, wherein the plurality

2   of network elements are self-assembled into a multi-cluster network, wherein a start node

3   is selected as a base node, wherein the base node communicates an assembly packet

4   throughout the mobile internetwork, wherein information of the assembly packet

5   alternates with each successive communication between directing a node to become a

6   base node of a particular cluster number and directing a node to become a remote node of

7   a particular cluster number, wherein the particular cluster number is incrementally

8   changed with each successive communication of the assembly packet.

1   41.   (Previously amended) The mobile internetwork of claim 1, wherein the gateway

2   node performs service discovery that comprises synchronizing the gateway node,

3   authenticating the gateway node, determining at least one communication mode for the

4   gateway node, and informing the gateway node of resources available among the

5   plurality of network elements.

1   42.   (Previously amended) The mobile internetwork of claim 1, wherein data is

2   collected by the gateway node, wherein at least one operation is performed on the data in

3   response to parameters established by a user, the at least one operation including at least

4   one of classification, routing, processing, storing, and fusing.

1   43.   (Previously amended) The mobile internetwork of claim 42, wherein the data is

2   vehicle diagnostic data, wherein diagnostic operations are performed in response to the

3   data.

1   44.   (Previously amended) The mobile internetwork of claim 42, wherein routing

2   comprises selecting at least one communication type and at least one communication

3   coupling for use in routing the collected data.

1   45.   (Previously amended) The mobile internetwork of claim 42, wherein routing

2   comprises selecting at least one data type for routing, selecting at least one of the ·

3   plurality of network elements to which to route the selected data, selecting at least one

4   route to the selected network element, and routing the selected at least one data type to

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5   the selected at least one of the plurality of network elements.

1   46.   (Previously amended) The mobile internetwork of claim 42, wherein processing
2   comprises selecting at least one data type for processing, selecting at least one processing
3   type, selecting at least one of the network elements to perform the selected processing
4   type, and transferring data of the selected data type to the selected network elements
5   using at least one route through the network.

1   47.   (Previously amended) The mobile internetwork of claim 46, wherein data
2   processed in a plurality of nodes is aggregated for further processing by other nodes.

1   48.   (Previously amended) The mobile internetwork of claim 46, wherein data
2   processed by the gateway node is aggregated for reporting to at least one user.

1   49.   (Previously amended) The mobile internetwork of claim 42, wherein storing
2   comprises selecting at least one data type for storage, selecting at least one storage type,
3   selecting at least one of the network elements to perform the selected storage type, and
4   transferring data of the selected data type to the selected network elements using at least
5   one route through the plurality of network elements.

1   50.   (Previously amended) The mobile internetwork of claim 42, wherein using
2   comprises a first node transmitting at least one query request to at least one other node,
3   wherein the first node collects data from the at least one other node in response to the at
4   least one query request, and processes the collected data.

1   51.   (Previously amended) The mobile internetwork of claim 1, wherein the plurality
2   of network elements comprise a plurality of application programming interfaces (APIs),
3   wherein the APIs include APIs for at least one of application support, database services,
4   routing, security, network management, and deployment.

1   52.   (Previously amended) The mobile internetwork of claim 51, wherein the APIs for

2   application support, database services, and routing are hosted on at least one gateway

3   node, wherein the APIs for security, network management, and deployment are shared

4   among at least one other gateway node and at least one port node.

1   53.   (Previously amended) The mobile internetwork of claim 51, wherein the plurality

2   of APIs are layered, wherein the plurality of APIs enable distributed resource

3   management by providing network resource information among the plurality of network

4   elements, wherein information transfer among the plurality of network elements is

5   controlled using a synchronism hierarchy established in response to the network resource

6   information.

1   54.   (Previously amended) The mobile internetwork of claim 1, wherein the plurality

2   of network elements support atomic transaction methods.

1   55.   (Previously amended) The mobile internetwork of claim 1, wherein the gateway

2   node includes sensing, processing, communications, and storage devices supporting a

3   plurality of processing and protocol layers.

1   56.   (Previously amended) The mobile internetwork of claim 1, wherein the gateway

2   node supports at least one of wireless communication modes, wired communication

3   modes, and hybrid wired and wireless communication modes.

1   57.   (Previously amended) The mobile internetwork of claim 1, wherein the gateway

2   node is coupled to the at least one remote computer using the plurality of network

3   elements, wherein the plurality of network elements includes at least one of at least one

4   station gateway, at least one server, at least one repeater, at least one interrogator, and at

5   least one network, wherein the at least one network includes wired networks, wireless

6   networks, and hybrid wired and wireless networks.

1   58.   (Previously amended) The mobile internetwork of claim 57, wherein the at least

2   one network comprises at least one of the Internet, local area networks, wide area

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3   networks, metropolitan area networks, and information service stations.

1   59.   (Previously amended) The mobile internetwork of claim 57, wherein the plurality
2   of network elements provides remote accessibility using World Wide Web-based tools to
3   data, code, control, and security functions, wherein data includes signals, wherein code
4   includes signal processing, decision support, and database elements, and wherein control
5   includes operation of the plurality of network elements.

1   60.   (Previously amended) The mobile internetwork of claim 1, wherein the plurality
2   of network elements comprise a plurality of network element sets, wherein the plurality
3   of network element sets are layered.

1   61.   (Previously amended) The mobile internetwork of claim 1, wherein the gateway
2   node comprises a plurality of node types that includes at least one node of a first type and
3   at least one node of a second type, wherein a first network having a first node density is
4   assembled using the at least one node of a first type, wherein a second network having a
5   second node density is assembled using the at least one node of a second type, wherein
6   the second network is overlaid onto the first network.

1   62.   (Previously amended) The mobile internetwork of claim 1, wherein software and
2   data are transferable among the plurality of network elements, wherein the transfer is
3   remotely controllable, wherein the software and the data are downloadable from at least
4   one location selected from a group consisting of storage devices of the plurality of
5   network elements, external storage devices, and remote storage devices.

1   63.   (Previously amended) The mobile internetwork of claim 1, wherein the plurality
2   of network elements are managed as a distributed and active database using a distributed
3   resource management protocol, wherein the plurality of network elements are reused
4   among different applications, wherein the network elements are used in multiple classes
5   of applications.

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1 64. (Previously amended) The mobile internetwork of claim 1, further comprising at
2 least one database, wherein the at least one database includes at least one of storage
3 devices coupled to at least one of the plurality of network elements and storage devices of
4 the gateway node.'

1 65. (Previously amended) The mobile internetwork of claim 1, wherein at least one
2 coupling among the gateway node and at least one external network supports data
3 transfer among the gateway node of a host vehicle, wherein the data includes vehicle
4 service data, diagnostic data, maintenance history data, security data, electronic mail, and
5 entertainment software.

1 66. (Previously amended) The mobile internetwork of claim 1, wherein at least one
2 coupling among the at least one peripheral electronic device and at least one external
3 network supports data transfer among the gateway node of a host vehicle, wherein the
4 data includes vehicle service data, diagnostic data, maintenance history data, security
5 data, electronic mail, and entertainment software.

1 67. (Previously amended) The mobile internetwork of claim 1, wherein the gateway
2 node is coupled to at least one diagnostic device of a host vehicle.

1 Claim 68 (canceled).

1 69. (Previously amended) The mobile internetwork of claim 1, wherein the gateway
2 node manipulates at least one of vehicle assembly data, vehicle maintenance data, vehicle
3 diagnostics data, vehicle position data, vehicle operations profile data, fleet management
4 data, fleet reliability analysis data, security system data, entertainment system data, and
5 targeted advertising data.

1 70. (Previously amended) The mobile internetwork of claim 1, wherein at least one
2 subset of the plurality of network elements comprise at least one sensor network, wherein
3 the at least one subset further includes at least one sensor node, at least one gateway

4   station, at least one server, at least one gateway network, and at least one client computer

5   hosting a World Wide Web browser, wherein the at least one node is configured as the at

6   least one gateway station and the at least one sensor node.

1 · 71.   (Previously amended) The mobile internetwork of claim 70, wherein the at least

2   one sensor node is coupled among a monitored environment and the at least one client

3   computer, wherein functions of the at least one sensor node are remotely controllable

4   using the at least one client computer, wherein the at least one sensor node provides the

5   node information including node resource cost and message priority to the plurality of

6   network elements, wherein data processing is distributed among the plurality of network

7   elements in response to the node information

1   72.   (Previously amended) The mobile internetwork of claim 70, wherein at least one

2   redundant communication pathway is established among the plurality of network

3   elements.

1   73.   (Previously amended) The mobile internetwork of claim 70, wherein the at least

2   one gateway station performs at least one of protocol translation, sensor network

3   management, management of transmissions from a remote user, and interfacing with at

4   least one communication physical layer including wired local area networks, packet

5   radio, microwave, optical, wireline telephony, cellular telephony, and satellite telephony.

1   74.   (Previously amended) The mobile internetwork of claim 70, wherein the at least

2   one gateway network includes wired networks, wireless networks, and hybrid wired and

3   wireless networks, wherein the at least one gateway network comprises at least one of the

4 · Internet, local area networks, wide area networks, metropolitan area networks, and

5   information service stations.

1   Claim 75 (canceled).

1 . 76.   (Previously amended) A mobile internetwork, comprising:

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2   means for coupling a plurality of network elements including at least one node

3   and at least one local area network among at least one peripheral electronic device,

4   wherein the means for coupling includes at least one interface means, at least one first

5   processing means for performing real-time processing operations and at least one second

6   processing means for performing high level processing operations, wherein the means for

7   coupling provides at least one of data processing, data storage, access control, protocol

8   translation, security including service discovery and device authentication, and network

9   control, wherein the means for coupling controls remote access to the mobile

10   internetwork in response to intermittent external communications;

11   means for manipulating node information including configuration and security

12   information;

13   means for automatically assembling and configuring the plurality of network

14   elements in response to the node information;

15   means for remotely controlling at least one function of the plurality of network

16   elements; and

17   means for providing secure interoperability among the plurality of network

18   elements in response to the node information.